KOMATSU

UPGRADE

KOMTRAX Plus

APPLICABLE MACHINES

As of January 2021

MECHANICAL DUMP TRUCKS	HD465-8/8E0, HD605-8/8E0, HD785-7*, HD785-8/8E0/8R, HD1500-8
ELECTRIC DUMP TRUCKS	730E-10, 830E-5, 930E-5, 980E-5
EXCAVATORS	PC1250-11/11E0/11R, PC1250LC-11, PC2000-11/11E0/11R, PC3400-11M0, PC4000-11/11M0, PC7000-11M0
WHEEL LOADERS	WA600-8/8E0, WA800-8, WA900-8/8E0/8R
DOZERS	D375A-8/8E0, D375Ai-8, D475A-8/8E0

* retrofit kit is available

APPLICATION FEATURES

	Fleet Summary & Trend	Work Status	Payload	Event Map	Site Report		Data Download
					Gradient Map	**Road Roughness Map**	
MECHANICAL DUMP TRUCKS	✓	✓	✓	✓	✓	✓ *	✓
ELECTRIC DUMP TRUCKS	✓	✓	✓	✓	✓		✓
EXCAVATORS	✓	✓		✓			✓
WHEEL LOADERS	✓	✓		✓			✓
DOZERS	✓	✓		✓			✓

* Standard for HD785-8/HD1500-8, Option sensor are required for HD465-8/605-8

Contact your local Kirby-Smith Machinery

Location for complete details.
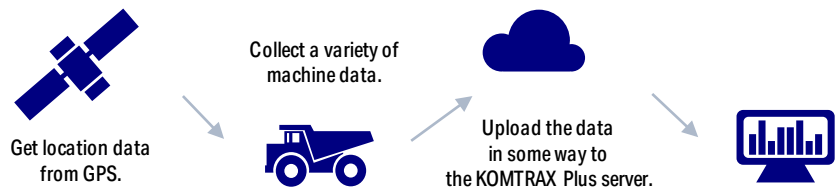
www.kirby-smith.com   **Toll Free: 888-861-0219**

KIRBY-SMITH MACHINERY, INC.®

KOMTRAX Plus

WHY USE KOMTRAX Plus?

KOMTRAX Plus is a management system for large machinery.
The health and operating status of machines can be monitored from remote locations via satellite communication. This helps to prevent machine trouble and improve the efficiency of machine management operations.
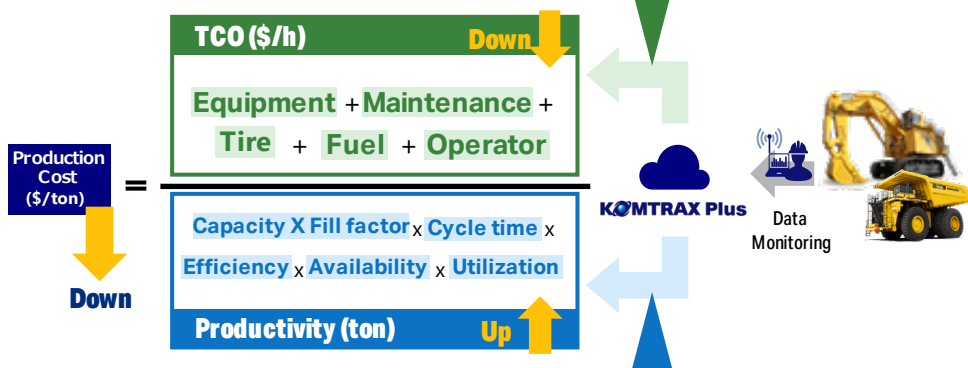
Collect a variety of machine data.

Get location data from GPS.

Upload the data in some way to the KOMTRAX Plus server.

NEW FUNCTIONS OF KOMTRAX Plus

The following functions have been added to KOMTRAX Plus new ver.

Controller	Detailed machine data with GPS is collected by 1sec
Web application	- Raw data download as csv files from server - Operation monitoring report for each machine - Site report includes road condition *Only available for dump truck owners

IMPROVE SAFETY/OPTIMIZE $/ton

Komatsu will progress mining business with customer to reach the customer's goal: Safety Operation and $/ton optimization.

1. Reduce Operation Cost
(Repair & Maintenance activity)

- Enhance capability to reduce machine down through daily monitoring
- Enhance component life by condition based maintenance

TCO ($/h) — Down

$$\text{Equipment} + \text{Maintenance} + \text{Tire} + \text{Fuel} + \text{Operator}$$

Production Cost ($/ton) =

Capacity X Fill factor x **Cycle time** x **Efficiency** x **Availability** x **Utilization**

Productivity (ton) — Up

Down

KOMTRAX Plus

Data Monitoring

2. Proposals for production improvement
(Continuous improvement activity)

- Propose fuel saving operation
- Improve site productivity
- Monitor dangerous operation
- Propose operator training

CONTROLLER FEATURES

KOMTRAX Plus new ver. is capable of high-resolution data collection with GPS information. More detailed and realistic machine operations in site can be analyzed.

KOMTRAX Plus former data
Summarized machine data is collected by **20 hours of SMR** to grasp long term trend for prediction of OV timing.

KOMTRAX Plus new data
Detailed machine data **with GPS** is collected by **1sec** to analyze machine operation in site.

No.	Data Category	Communicate	Data	KOMTRAX Plus former data	KOMTRAX Plus new data
1	KOMTRAX Plus former data	Satellite (Orbcomm / Iridium) or WLAN/wired(manual) download	Fault data	✓	✓
2			Trend data	✓	✓
3			Snapshot	✓	✓
4			Load map	✓	✓
5			Payload data	✓	✓
6	KOMTRAX Data	Satellite (Orbcomm / Iridium)	Location, SMR	✓	✓
7			Daily operational data (Step5)		✓
8	KOMTRAX Plus new data	WLAN or wired(manual) download	1 second logger data (including GPS)		✓
9			Event data		✓
10			Operation data for each cycle (only DT)		✓

KOMTRAX Plus

To use the following applications, it is necessary to download machine data and upload it to the KOMTRAX Plus server. Please contact your local distributor for the access.

1. RAW DATA DOWNLOAD

Once data is uploaded to KOMTRAX Plus server, user can download data within retention period* as csv files from the server.   *For 3 months

For all machines:
- 1 sec logger data
- Event data

For dump trucks:
- Cycle data

User can analyze their own data.

2. WEB VIEWER

This is a web application that can monitor machine operation and mine road conditions.

Fleet Summary & Trend
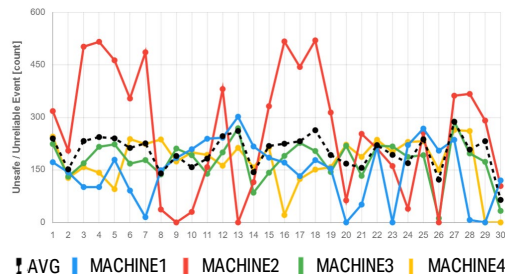
Operation result can be seen.
User can check the productivity, working hours, fuel consumption, number of times unsafe/unreliable events occur, etc. with numerical value and trend graphs.

Easily identify machines with a prominent number of unsafe events.

AVG ■ MACHINE1 ■ MACHINE2 ■ MACHINE3 ■ MACHINE4

Work Status

User can check the work efficiency by visualizing the work status of the machines.

Quickly identify machines that have been idling for long time.

- STATUS 1
- STATUS 2
- STATUS 3
- STATUS 4
- STATUS 5
- STATUS 6
- Job Efficiency
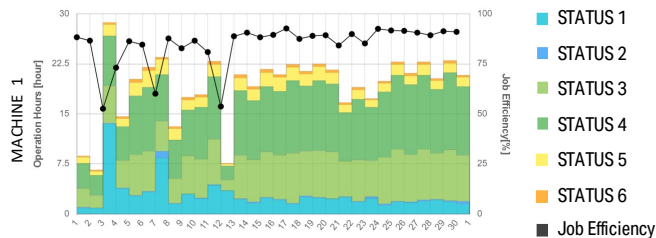
Event Map

User can check event location for inadequate and unsafety operation. Dump truck owner can check its route on the map.

Visualize the locations in the site where overspeed occurs frequently.
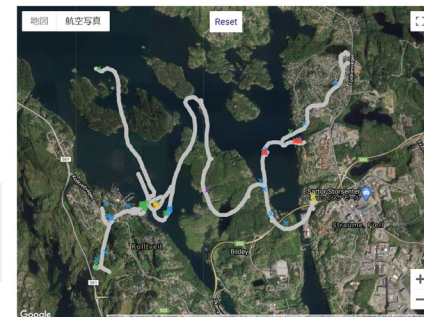
- EVENT 1
- EVENT 2
- EVENT 3
- EVENT 4
- EVENT 5

Payload

User can check the loading operation meet the loading policy.

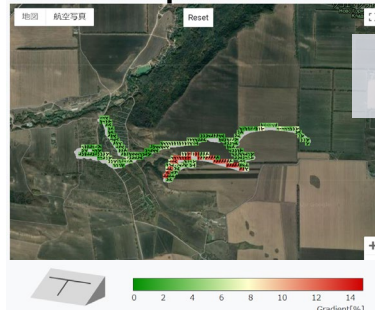See at a glance machines that have exceeded the loading policy.

Site Report

User can check the inclination and roughness of the site.
KOMTRAX Plus new ver. Controller calculate road roughness by using suspension pressure data every second.
*Its only available for dump truck owner.   **The road roughness map is only available for certain models.

Gradient Map

Road Roughness Map

Easily see where road conditions are bad.

A,B C D E *If the road roughness level is over C, please consider road maintenance